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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,817	06/04/2001	Gerald Oberschmidt	450117-03373	4577

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EXAMINER	
DEAN, RAYMOND S	

ART UNIT	PAPER NUMBER
2684	

DATE MAILED: 02/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/873,817	OBERSCHMIDT ET AL.	
	Examiner	Art Unit	
	Raymond S Dean	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Janurary 10, 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20 - 25, 27, and 30 - 38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20 - 25, 27, and 30 - 38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claim 28 is withdrawn in view of the newly discovered reference(s) to Brown et al. (5,880,695). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 20 – 22, 24, 27, 30 – 35, and 37 – 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Judd (US 6,731,904) in view of Knapp (EP 0515728) and in further view of Brown et al. (5,880,695).

Regarding Claim 20, Judd teaches an active reflector for use in indoor wireless data communication systems (Figure 5, Column 3 lines 8 – 27, Column 6 lines 1 – 3, Column 6 lines 20 - 24) comprising receiving means for receiving signals from a first mobile terminal and transmitting means for transmitting the received signals to a second mobile terminal in an omni-directional way (Column 3 lines 8 – 27, Column 6 lines 45 – 48, Column 6 lines 59 – 61, the repeater can be used in an ad hoc system of mobile terminals, the broadcast antenna can

transmit the received signals in an omni-directional way) for direct communication with high data rates between mobile terminals in an indoor environment (Column 6 lines 57 – 58, LMDS has high data rates thus the repeater can operate in high data rate environments); wherein the active reflector does not comprise a baseband processing and does not influence the logical set-up of the indoor wireless data communication system (Column 3 lines 8 – 27, Column 6 lines 20 – 24, the repeater module receives a signal at a first RF frequency and retransmits said signal at a second RF frequency, the repeaters can be daisy chained to provide coverage so that mobile terminals that don't have a direct radio path due obstructions in the building can communicate with one another); and said active reflector further comprises a first antenna connected to the receiving means and a second antenna connected to the transmitting means (Figure 5, Column 3 lines 8 – 27);

Judd does not specifically teach an active reflector that is mounted above the first and second mobile terminals in the indoor environment to provide for an indirect line of sight connection between the active reflector and each mobile terminal and wherein the first and the second antenna are circular polarized antennae with the same polarization direction.

Knapp teaches an active reflector that is mounted above the terminals in the indoor environment to provide for an indirect line of sight connection between the active reflector and each terminal (Figure 1, Column 3 lines 15 - 19).

Judd and Knapp both teach an indoor wireless system comprising repeaters thus it would have been obvious to one of ordinary skill in the art at the

time the invention was made to use the repeater orientation taught above in Knapp in the system of Judd for the purpose of creating reliable and optimal wireless links for the mobile terminals in the indoor environment as taught by Knapp.

Judd in view of Knapp does not teach wherein the first and the second antenna are circular polarized antennae with the same polarization direction.

Brown teaches the first and second antennae that are circularly polarized antennae with the same polarization direction (Column 3 lines 26 – 28).

Judd in view of Knapp and Brown teach a wireless system comprising repeaters thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the circularly polarized antennae taught in Brown in the repeaters of Judd in view of Knapp for the purpose of increasing the isolation between the transmit and receive antennas thus minimizing the interference as taught by Brown.

Regarding Claim 21, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 20. Judd further teaches signal processing means between said receiving means and said transmitting means for processing received signals (Column 3 lines 8 – 27, the repeater module receives a signal at a first RF frequency and retransmits said signal at a second RF frequency thus there will be a signal processing means that enables said frequency translation).

Regarding Claim 22, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 21. Judd further teaches at

least one gain block between the receiving means and the transmitting means (Figure 5, Amplifier (76) is the gain block).

Regarding Claim 24, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 21. Judd further teaches signal filtering means for filtering the received signals or the received and amplified signals (Figure 5, Filter (66)).

Regarding Claim 27, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 21. Judd further teaches wherein the first and the second antenna have a uniform coverage pattern (Column 6 lines 45 – 48, Column 6 lines 59 – 63, antennas with uniform coverage are used in indoor wireless networks and ad hoc networks (Bluetooth)).

Regarding Claim 30, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 21. Judd further teaches wherein the signal processing means comprises a frequency translating means for changing the received signal frequency to another frequency, and transmitting the signal at the changed frequency to the mobile terminals (Column 3 lines 8 – 27, the repeater module receives a signal at a first RF frequency, translates, and retransmits said signal at a second RF frequency thus there will be a signal processing means comprising a frequency translating means that enables said frequency translation).

Regarding Claim 31, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 20. Judd further teaches

means for communicating data with at least one further active reflector (Column 3 lines 8 – 27, Column 6 lines 20 – 24).

Regarding Claim 32, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 20. Judd further teaches wherein power for the active reflector is supplied by a power outlet for an indoor lamp (Figure 1, Column 3 lines 15 – 19).

Regarding Claim 33, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 20. Judd further teaches wherein the active reflector is integrated into a lamp (Figure 1, Column 3 lines 15 – 19, the fact that the repeaters have Edison sockets allows said repeaters to be integrated into a lamp).

Regarding Claim 34, Judd teaches a wireless data communication system for direct communication between mobile terminals in an indoor environment at least one active reflector (Column 6 lines 20 – 24, Column 6 lines 45 – 48, Column 6 lines 59 – 61, the mobile terminals of a Bluetooth network transmit and receive data to and from one another via the repeaters), comprising: receiving means for receiving signals from a first mobile terminal and transmitting means for transmitting the received signals to a second mobile terminal in an omni-directional way (Column 3 lines 8 – 27, Column 6 lines 45 – 48, Column 6 lines 59 – 61, the repeater can be used in an ad hoc system of mobile terminals, the broadcast antenna can transmit the received signals in an omni-directional way) for direct communication with high data rates between mobile terminals in an indoor environment (Column 6 lines 57 – 58, LMDS has high data rates thus the

repeater can operate in high data rate environments); wherein the active reflector does not comprise a baseband processing and does not influence the logical set-up of the indoor wireless data communication system (Column 3 lines 8 – 27, Column 6 lines 20 – 24, the repeater module receives a signal at a first RF frequency and retransmits said signal at a second RF frequency, the repeaters can be daisy chained to provide coverage so that mobile terminals that don't have a direct radio path due obstructions in the building can communicate with one another); and said wireless data communication system further comprises a first antenna connected to the receiving means and a second antenna connected to the transmitting means (Figure 5, Column 3 lines 8 – 27);

Judd does not specifically teach an active reflector that mounted above the first and second mobile terminals in the indoor environment to provide for an indirect a line of sight connection between the active reflector and mobile terminal and wherein the first and the second antenna are circular polarized antennae with the same polarization direction.

Knapp teaches an active reflector that is mounted above the terminals in the indoor environment to provide for an indirect line of sight connection between the active reflector and each terminal (Figure 1, Column 3 lines 15 - 19).

Judd and Knapp both teach an indoor wireless system comprising repeaters thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the repeater orientation taught above in Knapp in the system of Judd for the purpose of creating reliable and optimal

wireless links for the mobile terminals in the indoor environment as taught by Knapp.

Judd in view of Knapp does not teach wherein the first and the second antenna are circular polarized antennae with the same polarization direction.

Brown teaches the first and second antennae that are circularly polarized antennae with the same polarization direction (Column 3 lines 26 – 28).

Judd in view of Knapp and Brown teach a wireless system comprising repeaters thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the circularly polarized antennae taught in Brown in the repeaters of Judd in view of Knapp for the purpose of increasing the isolation between the transmit and receive antennas thus minimizing the interference as taught by Brown.

Regarding Claim 35, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 34. Judd further teaches antennae connected to the transceivers of said first and second mobile terminals (Column 6 lines 59 – 61, the mobile terminals of the Bluetooth system have antennas through which said terminals can transmit and receive information).

Regarding Claim 37, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 34. Judd further teaches at least one further active reflector (Column 3 lines 8 – 27, Column 6 lines 20 – 24).

Regarding Claim 38, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 34. Judd further teaches at least two active repeaters comprising antennae for communicating signals from

and to a first active reflector to and from a second active reflector (Column 6 lines 20 – 24).

4. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Judd (US 6,731,904) in view of Knapp (EP 0515728) and in further view of Brown et al. (5,880,695) as applied to Claim 22 above, and further in view of Komara et al. (US 6,339,694).

Regarding Claim 23, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 22. Judd in view of Knapp and in further view of Brown does not specifically teach wherein the gain block comprises more than one sub-gain block, whereby at least one of the sub-gain blocks can be switched off.

Komara teaches wherein the gain block comprises more than one sub-gain block, whereby at least one of the sub-gain blocks can be switched off (Figure 7, Column 5 lines 56 – 64, the overall gain of the output amplifier, which comprises sub gain blocks, is adjusted through the switching on/off of said sub gain blocks).

Judd in view of Knapp and in further view of Brown and Komara teach a wireless system comprising repeaters thus would have been obvious to one of ordinary skill in the art at the time the invention was made to use the adjustable gain method taught in Komara in the repeaters of Judd in view of Knapp and in further view of Brown for the purpose of enabling said repeaters to effectively

compensate for the attenuation of the data and voice signals due to path loss as said signals travel to said repeaters as taught by Komara.

5. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Judd (US 6,731,904) in view of Knapp (EP 0515728) and in further view of Brown et al. (5,880,695) as applied to Claim 20 above, and further in view of view of Simon (5,570,354).

Regarding Claim 25, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 20. Judd in view of Knapp and in further view of Brown does not specifically teach an active reflector comprising one common antenna connected to the receiving means and the transmitting means.

Simon teaches an active reflector comprising one common antenna connected to the receiving means and the transmitting means (Figures 4 and 5, the repeater is (40)).

Judd in view of Knapp and in further view of Brown and Simon teach a repeater that uses antennas to retransmit or relay signals thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the use the single antenna configuration taught above in Simon in the repeaters of Judd in view of Knapp and in further view of Brown for the purpose of reducing the overall size of said repeaters thus creating repeaters that are lighter in weight and occupy a smaller space as taught by Simon.

6. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Judd (US 6,731,904) in view of Knapp (EP 0515728) and in further view of Brown et al. (5,880,695) as applied to Claim 35 above, and further in view of Shoki (5,894,598).

Regarding Claim 36, Judd in view of Knapp and in further view of Brown teaches all of the claimed limitations recited in Claim 35. Judd in view of Knapp and in further view of Brown does not specifically teach that the antennas of the transceivers of the mobile terminals are high gain antennas.

Shoki teaches the antennas of the transceivers of the mobile terminals are high gain antennas (Column 11lines 5 – 9, the antenna has a high gain in order to receive high capacity and high speed signals).

Judd in view of Knapp and in further view of Brown and Shoki teach mobile terminals that receive high data rate signals thus it would have been obvious to one of ordinary skill in the ad at the time the invention was made to use the high gain antenna taught by Shoki on the mobile terminals of Judd in view of Knapp for the purpose of enabling said mobile terminals to effectively receive the high capacity and high speed signals in the LMDS system as taught by Shoki.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S Dean whose telephone number is 703-305-8998. The examiner can normally be reached on 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond S. Dean
January 14, 2005

NAY MAUNG
SUPERVISORY PATENT EXAMINER